# CRANE'S

# ELEVATORS.

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THE

# Crane Bros. Manufacturing Co.,

MANUFACTURERS OF THE

# "VICTORIOUS"
# HYDRAULIC + PASSENGER
# ELEVATOR,

THE "VICTORIOUS" HYDRAULIC FREIGHT ELEVATOR,

Patent High Speed Steam Passenger Elevators,

PATENT STEAM FREIGHT ELEVATORS,

Direct Lift Hydraulic Passenger and Freight Elevators,

—AND—

SPUR AND WORM GEARED FACTORY ELEVATORS.

GEN'L OFFICES AND WORKS,
**North Jefferson and Desplaines Streets,**
CHICAGO, ILL.

EASTERN OFFICES,
**92 & 94 Liberty Street,**
NEW YORK.

JAMESON & MORSE, PRINTERS, CHICAGO.

HOUSTON & HARRIS,
*SOLE AGENTS.*
327 Hennepin Avenue,
Minneapolis, Minn.

# To Architects and Owners of Buildings.

IN PRESENTING to you our new Catalogue of Elevators of our manufacture, it is with the greatest confidence that we call your attention to their **Safety, Efficiency, Economy** and **Durability.** Our Elevators have been before the public nearly fifteen years, and there are now **Over Six Hundred in use.** It is with pride that we cite the fact that they have

**NEVER HAD AN ACCIDENT**

of the smallest kind, nor has there been any indication of danger. This statement cannot be made for any other Elevator.

Although it would appear that this is all that it is necessary to say for their **SAFETY,** yet we think it is due to ourselves to state that our Hydraulic Elevator has been submitted to a most searching investigation by a Committee of Experts, in competition with one made by the most prominent Elevator builder in the country; all manufacturers of Elevators being invited to participate in the competition. The result proved our Elevator to be **safe in every possible emergency.**

We are ready at all times to test our Elevators in competition with those made by other builders; in fact, we challenge them to a trial and defy criticism.

The high **EFFICIENCY** and the great **ECONOMY** of our Elevators have been demonstrated, again and again, by the most careful tests.

As to their **DURABILITY** we will only say, that the Elevators erected ten and twelve years ago by us, are still doing duty, and are as perfect as when first put in. They have hardly lost a day of service, and in many cases have not cost $15 a year for repairs, except for renewing cables.

As you are interested in having **the very best Elevator** in your building, we ask you to give these pages something more than a glance. We are confident that after a careful investigation, you will adopt our machines.

**CRANE BROS. MFG. CO.**

# General Instructions

## To those wishing us to furnish Estimates and Specifications for Elevators.

GIVE —

I. Height of lift; or travel of Elevator.

II. Height from floor to floor; and from upper landing to roof timbers.

III. Size of Platform or Car.

IV. If for Passenger Service, state about how expensive a Car.

V. Lifting capacity of Elevator.

VI. Ground Plan of basement, showing location of Elevator.

VII. If the Elevator is to be operated by tank service, state height and location. If from city pressure, give average pressure at the building.

P06901 TC

# The
# "Victorious" Hydraulic
# Passenger Elevator.

THE CUT opposite shows our "**Victorious**" **Hydraulic Passenger Elevator.** We would call your attention especially to the fact that this is the only Elevator that has been tested by experts and found to be **absolutely perfect.** In addition to having all the merits of other Elevators of its class, this one has,

Our Patent **Safety Governor.**

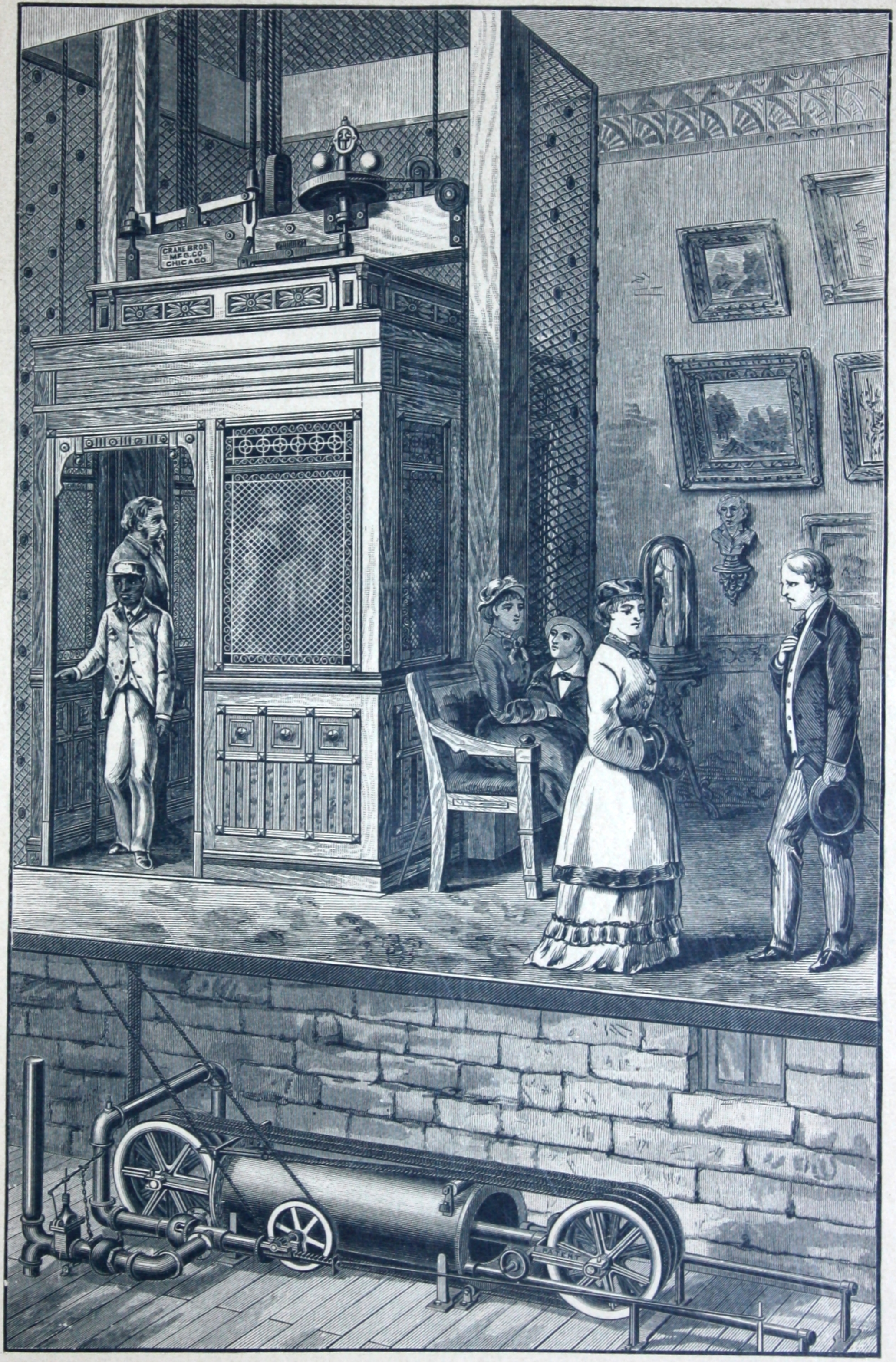
Our Patent **Safety Device** for preventing accidents in case the shifting cables get out of order.

Our **Safety Device** for preventing accidents in case the car meets an obstruction when descending.

Our Device for lubricating the cylinder.

Our Device for relieving the cylinder of the weight of the piston.

For detailed comparison of the HORIZONTAL CYLINDER and VERTICAL CYLINDER HYDRAULIC ELEVATORS, see pages 8 and 9.


CRANE BROS.
MF'G. CO.
CHICAGO

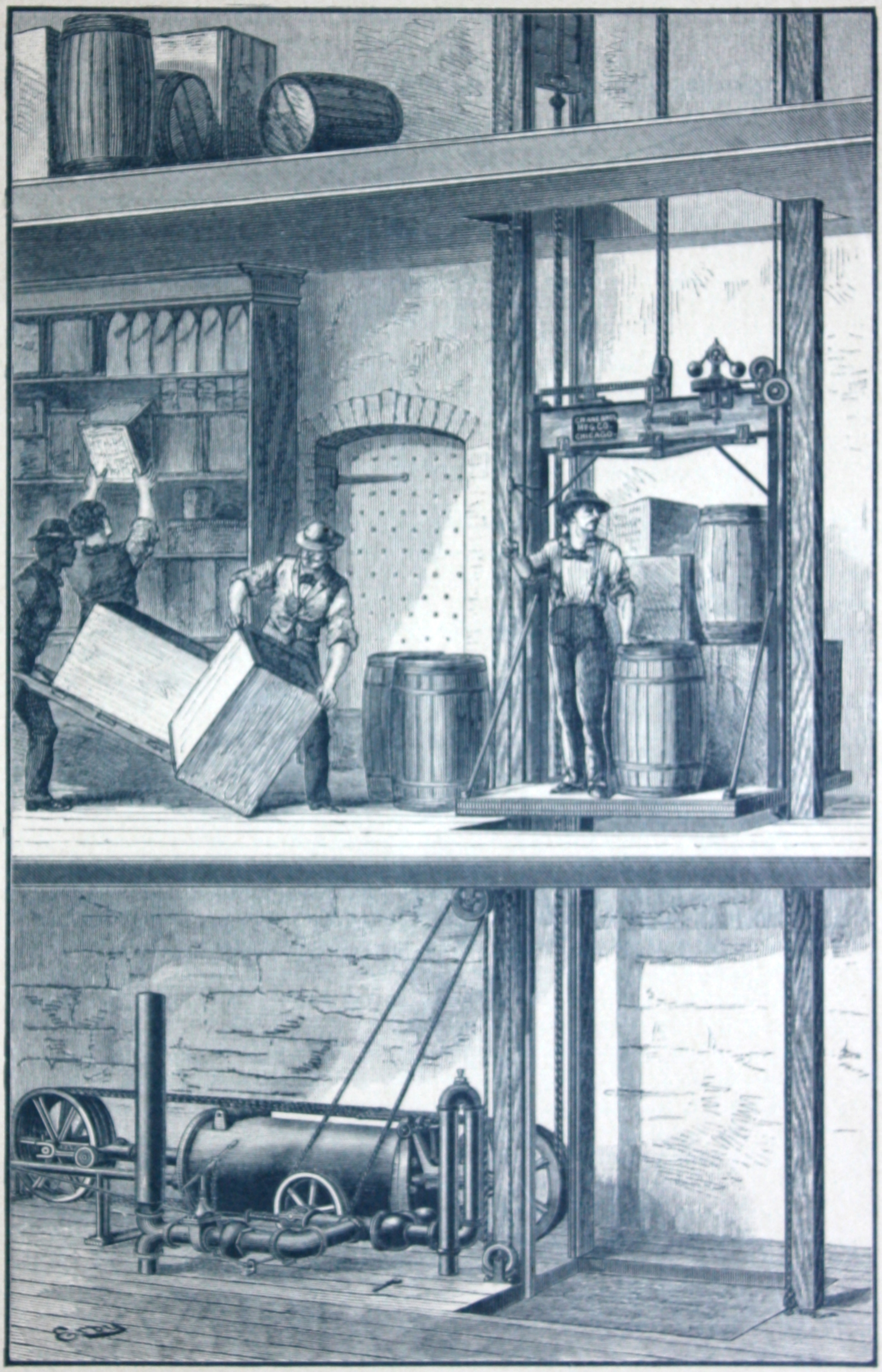
# The

# "Victorious" Hydraulic

# Freight ◇ Elevator.

THE CUT opposite shows our "**Victorious" Hydraulic Freight Elevator.** What we have said on the preceding page regarding the HYDRAULIC PASSENGER ELEVATOR, applies to this one—the only difference being in the number of cables used The machine is about four feet high.

Where basement room is valuable, we can house over the Elevator, and goods can be stored on top. The cage is well protected by a wrought iron guard four feet high. This prevents goods from overlapping and getting caught while the cage is moving.


CRANE BROS.
MFG. CO.
CHICAGO

## Comparison between the Horizontal Cylinder and Vertical Cylinder Hydraulic Elevator.

# The

# Horizontal + Cylinder + Elevator.

FROM THE **Crane Horizontal Cylinder Elevator** the full benefit and duty of the **pressure** can be obtained under all circumstances. For this reason it has shown under test and in actual service the highest maximum, and the **highest** average of **efficiency** of any Elevator.

The Horizontal Cylinder being open, access is easy to the packing and piston at all times; and any **leakage** can be **seen** and stopped at once by adjusting the packing.

When new **packing** is required, it is only necessary to slacken the cables, remove the follower of the piston, and replace the old packing with new. This can all be done in from two to three hours.

The feed and discharge being at the lowest point of the Cylinder, all the water is discharged at every backward stroke of the piston, carrying with it any **sand,** gravel or other substance.

The Horizontal Cylinder Elevator is **not troubled with air;** and if from any cause air should get into the Cylinder, it is all discharged as the water leaves the Cylinder, and in no way does it affect the service or efficiency of the machine.

The Horizontal Cylinder Elevator is almost **noiseless** in operation, and can be placed in any part of a building without disturbing any one.

The Horizontal Cylinder Elevator occupies the **least valuable space** in the building.

The Horizontal Cylinder Elevator being in the basement, there is **no unsightly machinery** in the halls, the corridors or the rooms.

If by any carelessness an accident should occur, cracking or **bursting** any part of the **Cylinder,** valve or connections, the flow of water would be at the lowest floor of the building, where **the least damage** could be done.

There is no danger from **freezing.** By running the cage to the lowest landing, the water is all discharged from the Cylinder. The valves and the connections all have drip pipes.

The **counter-balance** to the cage is run on guide posts and hardwood strips; and should it in any way become detached from the cable, it could not do any damage by its fall.

As the **Horizontal Cylinder is in one piece** it is bored perfectly true. Therefore the piston packing can be kept tight with the least possible friction.

# The

# Vertical Cylinder Elevator.

THE Vertical Cylinder Elevator receives the water at the top. It therefore **loses** the benefit of the **pressure** from the top to the bottom of the Cylinder; although it is claimed that this is recovered by the vacuum under the piston. When **air** gets into the Cylinder the vacuum is destroyed. This is proven by the fact that these Elevators vary so widely in their lifting capacity. The builder admitted at a test that **air may get in at any time.**

Besides affecting the lifting capacity, air in the Vertical Cylinder frequently gives the car so **unsteady a motion** that it is **dangerous** for passengers to land. The air can be removed only with great difficulty.

The piston travels only to within eight or ten inches of the feed-pipe at the top. This space is constantly filled with water, and any gritty substance which enters through the feed-pipe cannot be washed out, but remains and **grinds and cuts the Cylinder** and the packing.

As the **piston packing** has to travel much farther and much faster in the Vertical than in the Horizontal Cylinder, it **wears out sooner**: and as the Vertical Cylinder is closed at both ends, any wearing inside cannot be noticed, until it has gone so far as to seriously impair the efficiency of the machine.

When the stuffing boxes are tightened enough to prevent leaking, the friction is considerably increased.

These facts account for the **wide variation in the efficiency** of the Vertical Cylinder Elevator and for many of its **accidents.**

When the packing has worn a little in the Vertical Cylinder Elevator, the **cage cannot be kept at the landings** while it is being loaded or unloaded. It is long and tedious work to repair the packing, and everything has to be very nicely adjusted to start the Elevator again.

As the Vertical Cylinder is always full of water and more exposed than the Horizontal Cylinder, it is **more liable to freeze,** where there is any chance of freezing.

The Vertical Cylinder Elevator, with its traveling sheaves, **occupies more space** than the Horizontal Cylinder Elevator, and that out of the most valuable part of the building,

The piston rods are long and slender, and surmounted by the traveling sheaves and the counter weights. In the event of the cables breaking they would have no support, and could not fail to do great damage in falling.

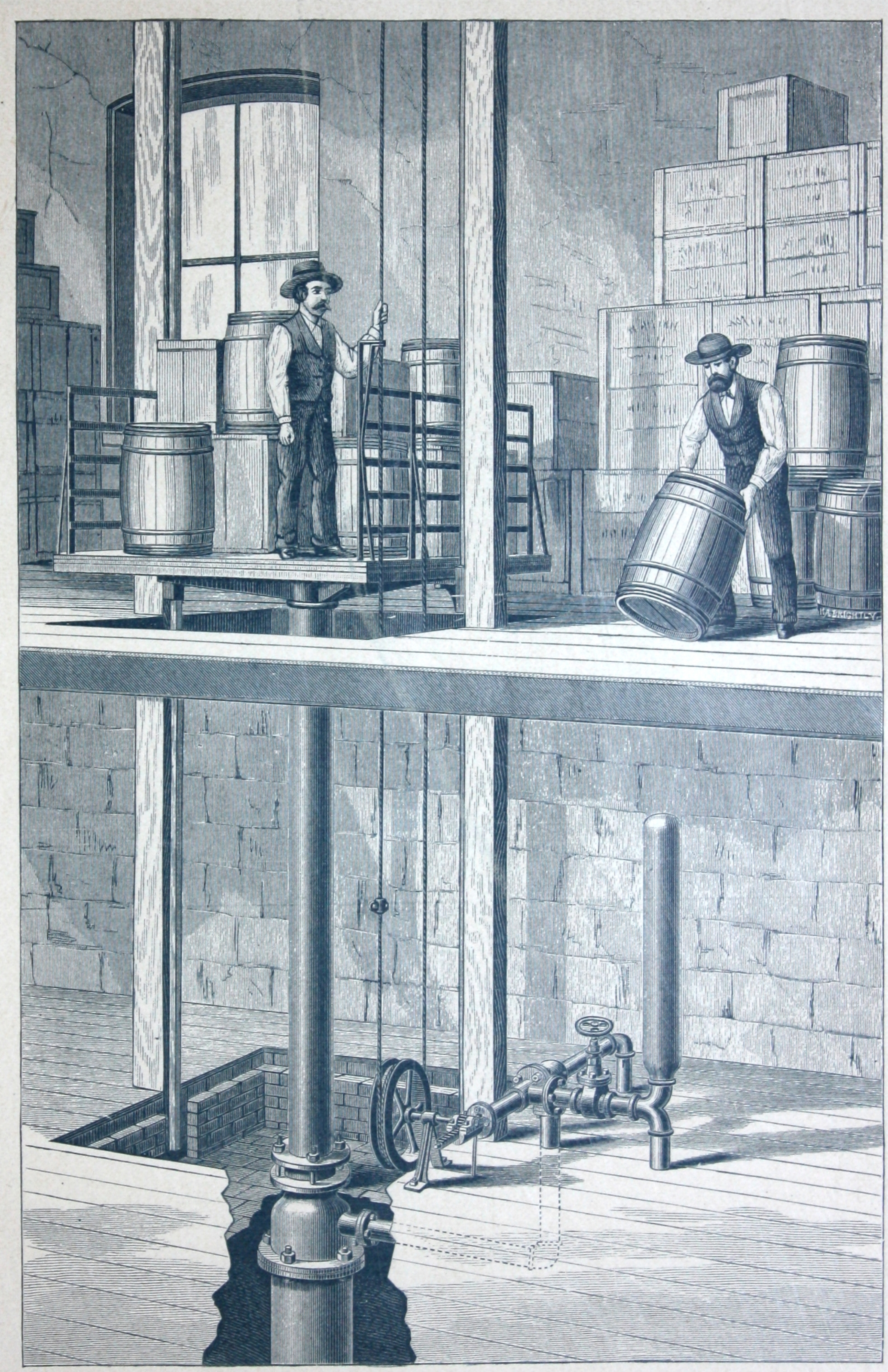
The Vertical Cylinder Elevator is **noisy** when in operation. In many instances this noise can be heard in any part of the building.

# The Direct Lift Hydraulic Elevator.

ON THE opposite page is the cut of our **Direct Lift Hydraulic Elevator.** It is used both for passenger and for freight service. Its main features are, **perfect simplicity** and the **absence of lifting cables**—doing away with the necessity of a safety-catch on the car.

These machines are not so economical in the use of water as those having the horizontal cylinder. We recommend them only where the economy of water is not so important; where the travel is short, where the water pressure is high, and where it is not expensive to sink a shaft for the casing. We have put them into a depth of seventy feet, but prefer short lifts.

Parties using these machines speak highly of them, and find the wear and tear to be unappreciable. We will furnish estimates for supplying these machines to raise any load to any height, but prefer not to contract to sink the shaft.


H.A.BRIGHTLY.

## New High Speed, Smooth-Running

# Steam Passenger Elevator.

THE CUT opposite shows our **New High Speed, Direct Worm-Geared, Smooth-Running, Steam Passenger Elevator.**

### DESIGN OF THE MACHINE.

Hitherto, for passenger service, no Steam Elevator has been able to compete with the Hydraulic Elevator in **speed** and **smoothness** of motion. When we designed this new Steam Passenger Elevator, we succeeded in producing a machine which, while having all of the advantages peculiar to steam, fully meets the demands of the times, in both speed and smoothness of motion. In other words we devised a machine more perfectly adapted to modern requirements than any other.

Quite a number of these machines are now running, and are meeting with great favor.

### CONSTRUCTION.

In this machine we have done away with the belt and pulleys. The drum is driven directly from the crank-shaft by means of a steel worm and gun-metal gear. This makes the engine simple, durable, positive and noiseless, and there is no danger of the Elevator running away, either by the breaking or the slipping of a belt.

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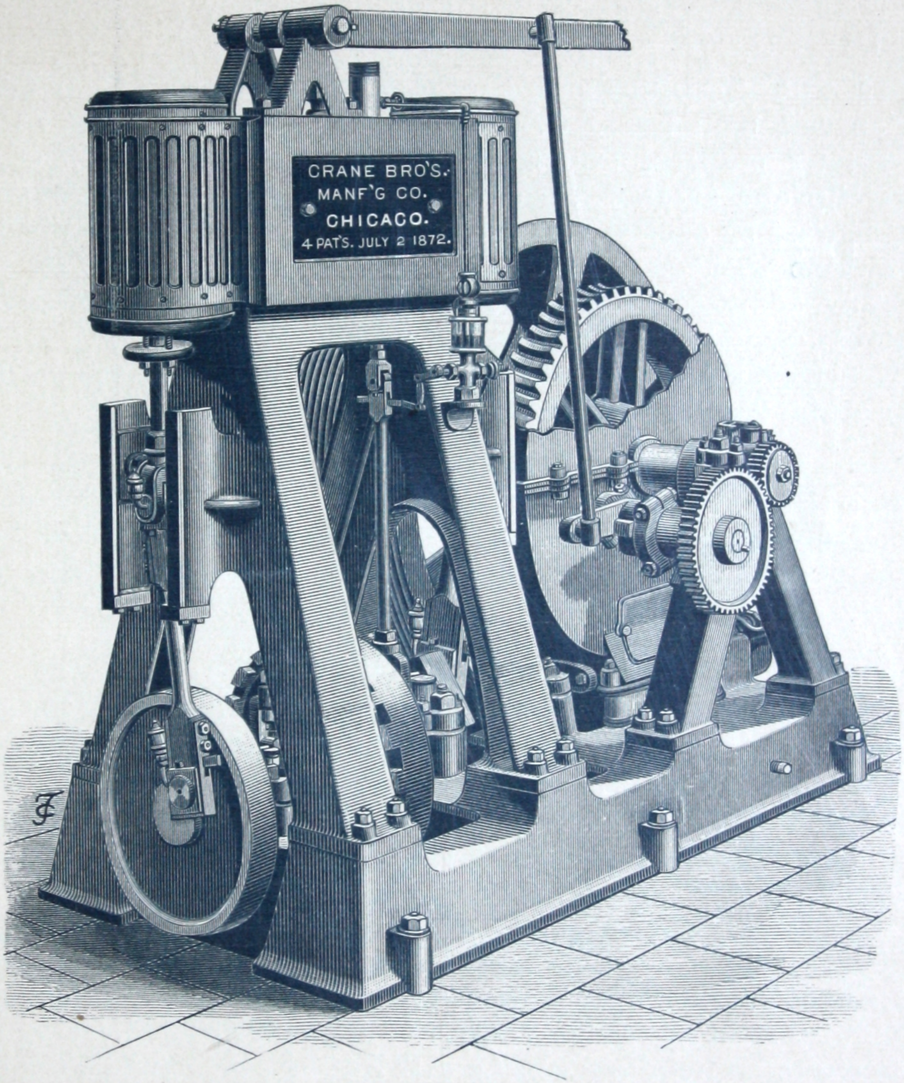
For the comparative Economy of Steam and Hydraulic Elevators, see page 18.


CRANE BRO'S.
MANF'G CO.
CHICAGO.
4 PAT'S. JULY 2 1872.

# The Steam Freight Elevator.

THE CUT opposite shows our **Steam Freight Elevator.** This Elevator has been before the public for over twelve years, and is greatly preferred by engineers and others on account of the simplicity and accessibility of the valves. As these valves have been adopted by several manufacturers of reversible double-engines, we assume that they are the very best for the work. It is now generally admitted that where the duty is heavy and constant, no other Elevator can approach this one.

This Elevator has **several safety features** not possessed by any other steam machine. The first one of these is,

### THE SAFETY BELT-BRAKE.

If the belt should break, the weight of the tightener would instantly come on the vertical rod. This would move the cam, throwing the starting lever into the center, put on the brake, and stop the engine. A second important device is,

### THE SLACK CABLE STOP.

If from any cause, the cables should unwind (as when the cage meets any obstruction in descending), they would immediately push an apron down, disengaging a spring, This spring pulls on a short cable, which throws the starting lever into the center, applies the brake, and stops the machine.

Besides this, we put on all of the cages, our

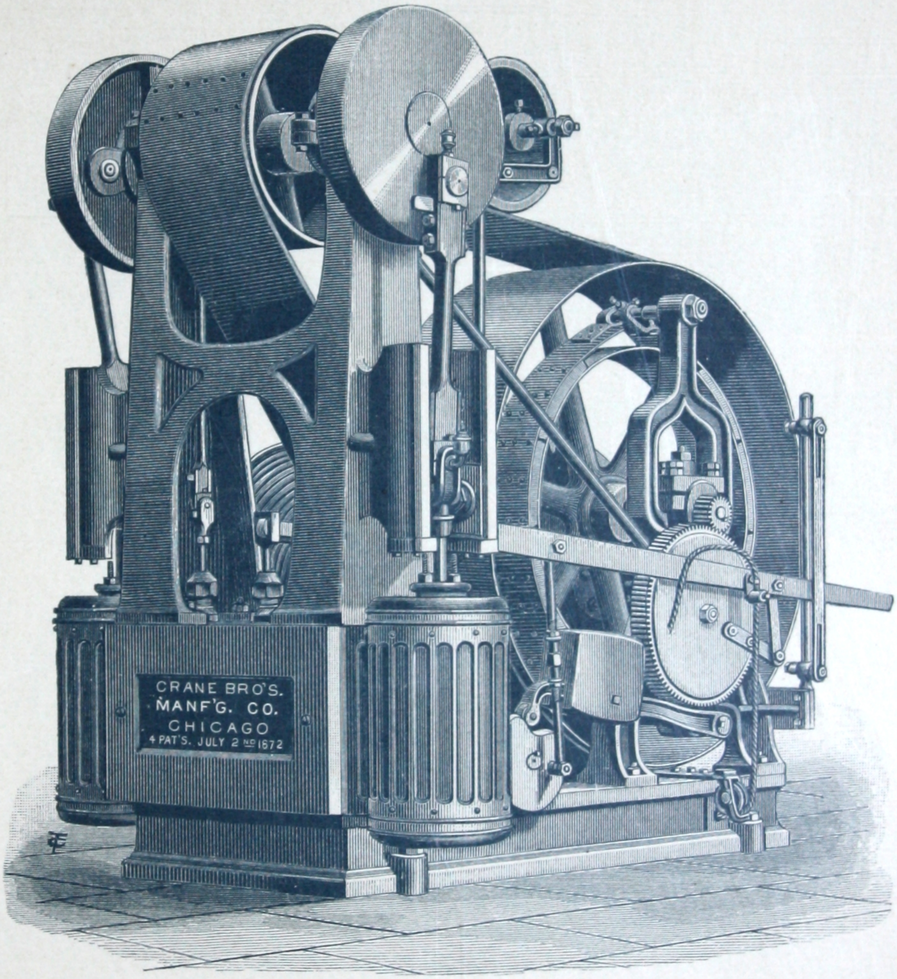
### AUTOMATIC SAFETY GOVERNOR.

(Described fully on page 20.)

A **screen** over the cage protects the operator from anything which might drop from the upper floors, and a guard about the sides prevents anything from overlapping and getting caught while the cage is moving. In addition to these safeguards, the Elevator has

### THE AUTOMATIC STOP,

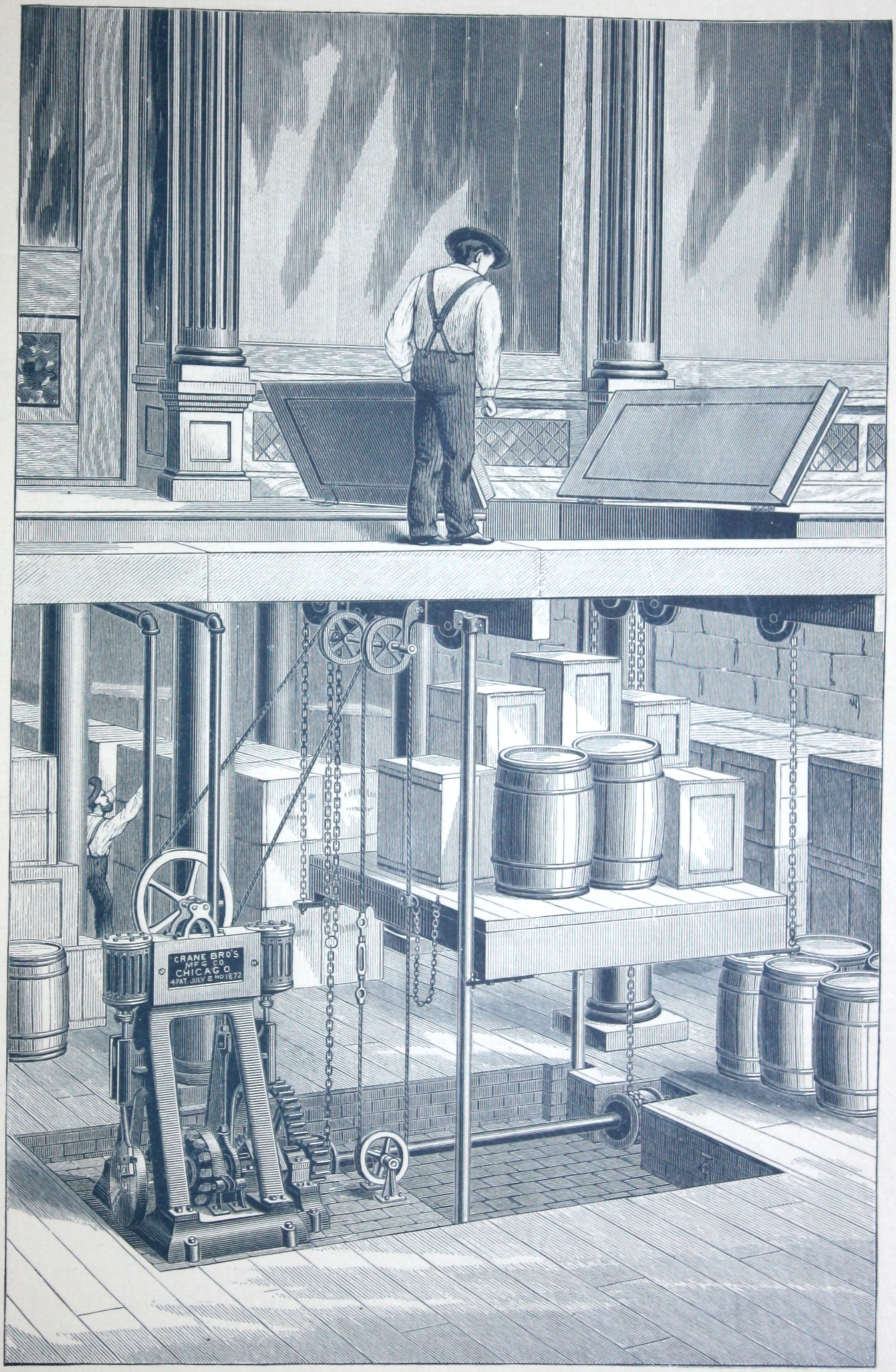
which prevents any accident resulting from the shifting cable getting out of order. This stops the cage at the upper and at the lower landing, without regard to the condition of the shifting cable.


CRANE BRO'S.
MANF'G. CO.
CHICAGO
4 PAT'S. JULY 2ND 1672

# The Steam Freight Elevator

## For Short Lifts.

THE CUT opposite shows our **Steam Freight Elevator** for short lifts. We designed it to meet the demand for a machine to be used outside of the building, where the lift is short, the duty heavy, and speed no object. It is simple, compact, strong and durable.


CRANE BRO'S
MFG CO
CHICAGO
PAT. JULY 2ND 1872

# Comparative Economy

OF

# Steam and Hydraulic Elevators.

ON account of the varying conditions under which Elevators run, and the want of elaborate tests, the evidence on this subject is not entirely conclusive. Below are given some of the most important facts on which to base an opinion.

The Chicago Music Hall showed that, with the same amount of fuel, one Steam Elevator, running at some little disadvantage, did as much work as two Vertical Cylinder Hydraulic Elevators running under the most favorable circumstances—that is, doing uniform work and using a compound pump.

We have a record of our New Steam Passenger Elevator running in an office building, on a lift of 60 feet. In one day it made 450 round trips, with an average load of 1200 pounds, using 860 pounds of *Western coal. To compare with this, we have records of single Hydraulic Elevators doing much less work on 1000 and 1200 pounds of Western coal. We know of an instance in which a Hydraulic Elevator, run by a small compound pump, was changed and run by a duplex pump, without increasing the amount of fuel used. We have recorded one case, in which three Hydraulic Elevators, run by a duplex pump, although doing little work, used 900 pounds of Western coal each per day. At present we know of two of our Hydraulic Passenger Elevators run by a compound pump, in an office building, doing heavy duty, each using 350 pounds of Anthracite coal per day.

From this evidence we do not hesitate to say that, where one or two Elevators, and possibly more, are wanted, Steam machines will work more economically than Hydraulic machines run by duplex pumps. Where, however, several Elevators are wanted to do light, rapid, and uniform service, Hydraulic machines, run by medium size compound pumps, are probably somewhat more economical,

In considering the matter of economy in the running of Elevators, it must be always borne in mind, that a Hydraulic Elevator, when once built, uses just as much power to lift any part of its load, as it does to lift the whole. When the work is regular, however, the machine can be so proportioned that the waste in power will not amount to much. But where the work is irregular, the machine has to be proportioned, so as to use at all times the power necessary to carry its maximum load. For this reason it does not do irregular work economically, and is not adapted to buildings in which meetings are held, but where the usual work is light or uniform.

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****Western coal has about 80 per cent. of the heating value of Anthracite coal.***

# Elevator Accidents.

As with Elevators, safety is of the very first importance, and as the prevailing opinions respecting the causes of accidents are so erroneous, we feel called upon to treat this interesting subject with some detail. When we consider the number of Elevators in use, and the dark and obscure places in which they run, the wonder is not that there are so many accidents, but that there are so few.

It is a mistake to blame the Elevator builder for every accident, as the man in charge, or his employer, is sometimes responsible.

The owner who, in contracting for an Elevator, considers nothing but its price, and who takes no care of it afterwards, is often responsible.

Yet, beyond this, there is the liability of the Elevator itself. In this respect there is a great difference in Elevators. Some are liable to certain accidents, with no protection; others are liable to the same accidents with protection; while some are not liable to them at all. It is unquestionably true that an Elevator not liable to a particular kind of accident is safer than one which is, even though the latter is protected by a safety device.

The impression exists that Elevator accidents are caused only or mainly by the breaking of the cables. So general is this impression, that a prominent manufacturer is taking advantage of it, and claiming to insure safety by using as many as eight cables on his Passenger Elevators, although he has hundreds running with only one. Now we do not know of a case in which an accident has happened to a Passenger Elevator from the breaking of the cables. The most serious result of this wrong impression, is the making of safety devices, which not only are not designed to prevent the usual accidents, but which, under any circumstances, will not work unless the cables actually do break. From the following considerations it will be seen that such safety devices are practically worthless.

On certain Hydraulic Elevators accidents are liable to happen from air getting into the cylinder, from the unwinding of the working cables, from the disarrangement of the shifting cables, from the breaking of the piston rods, the cylinder or the water connections, and from the Elevator running away on account of overloading.

On certain Steam Elevators accidents are liable to happen from the breaking of the belt, from the unwinding of the cables, and from the Elevator running away on account of overloading.

It may seem surprising, but it is nevertheless true, that many Elevators now running, in even prominent buildings, are liable to most of these accidents, and have no protection against them.

We call your special attention to our Patent Automatic Safety Governor, described on the next page.

# The Safety Governor.

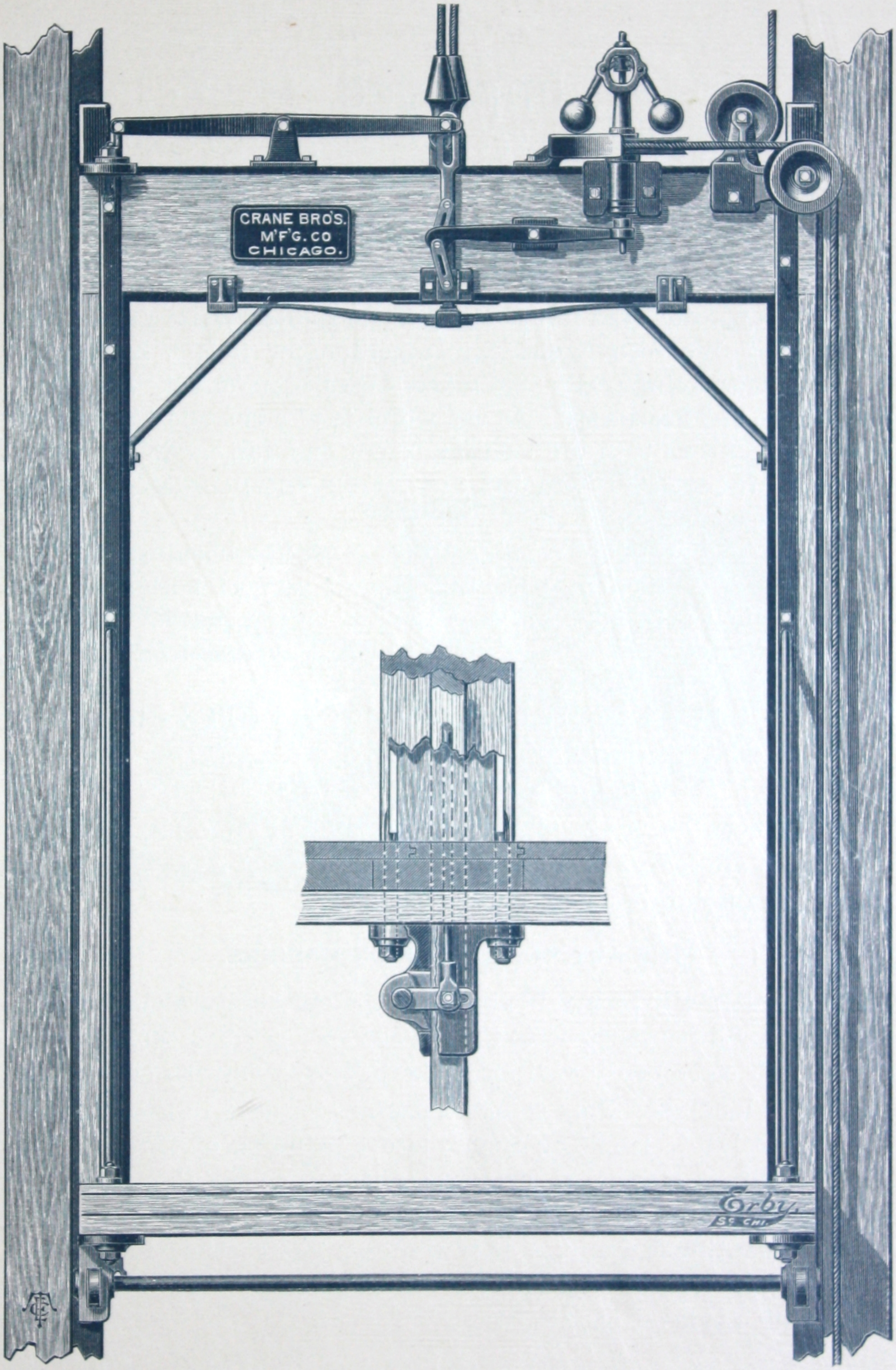
WE WERE aware of the great variety of causes of Elevator accidents when we adopted our **Automatic Safety Governor,** and we succeeded in getting a device that would check and hold the car whenever it began to go beyond a safe speed, no matter what the cause was. The Safety Governor has been in use over ten years, and there are some two hundred in operation. They have very frequently been tested under the most trying circumstances, and have **never failed to act.** When the car's safety is in any way menanced, it rarely falls over one foot.

We will attach the Governor to any car, load the car with all it can carry, **cut all the cables anywhere,** and stand any damage done.

## Mode of Operation.

BY THE diagram on the opposite page, it will be seen that the **Safety Governor** is something like the ordinary engine governor. It is bolted to the beam of the cage, and is kept in motion by a rope passing over the three sheaves shown. This rope is fastened at the top and bottom of the hatchway. When the car moves, the balls revolve and rise. Should the speed of the car increase above the rate at which the Governor is set, the balls rise so that the stem is pushed down, the hook end of the small lever is raised, and the toggle-joint (in the center) is disengaged. This puts the strain of the spring on the lever above the beam, which draws up the long rod, turning the cross-bar underneath and fastens the steel dogs (as shown in the small drawing) into the guides.

**To release the cage** it is only necessary to raise it a few inches and secure the spring by the toggle-joint. The Elevator is then ready for service.


CRANE BRO'S.
M'F'G. CO
CHICAGO.
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Sc. Chi.

## Improved

# Worm Geared Belt Elevator.

ON THE opposite page is the cut of our **Improved Worm Geared Belt Elevator.** We recommend this machine for freight service in buildings having power, and where speed is no object. It is **Simple, Durable** and **Economical.** As the worm is of steel, and the gear of gun-metal, and as both are accurately cut and run in an oil chamber, they are protected from dirt, are durable and noiseless, and run with the least possible friction and wear.

The pulleys run on brass bushings and the bushings on the shaft. This is an advantage over the old way of babbitting the pulleys, which causes heating and rattling on the shaft.

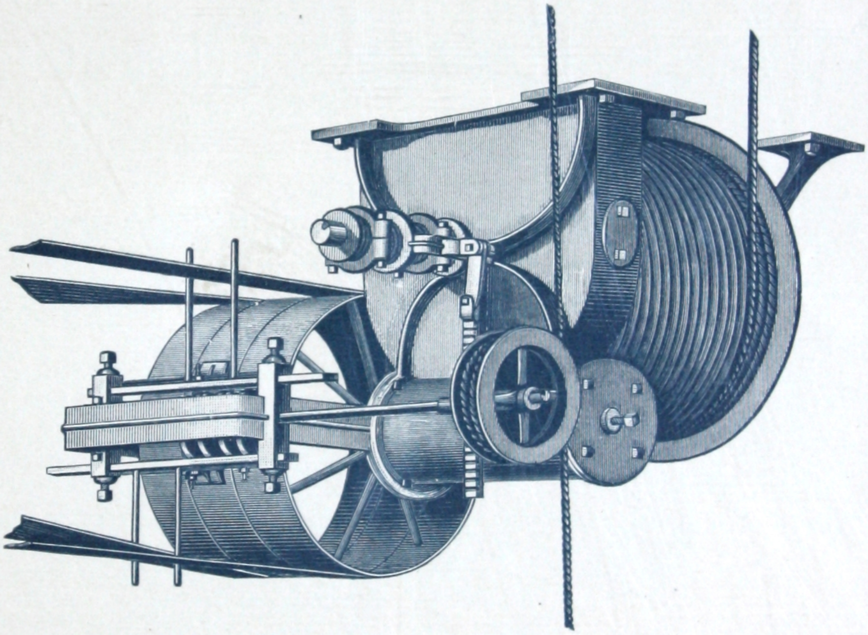
## Its Safety Devices are:

### THE POSITIVE SAFETY PAWL.

In the event of the breaking or unhitching of the cable, the Pawl and Slides are locked together by a powerful steel spring, thus preventing the fall of the cage.

### THE AUTOMATIC STOP ON MACHINE.

This Automatic Safety Device is placed on the drum shaft of the machine, and is so constructed that should the operating cable become disarranged or broken it will shift the belt, stopping the elevator at the proper landings. This safety feature is designed to prevent that class of accidents resulting from the over-winding of the cable. If the Elevator is started up or down, and the operating cable gives way, or the operator neglects to use it at the proper time, the machine continues running after the cage has reached its highest or lowest point; then it must over-wind, and damage follows. With this Safety Device it cannot occur.



# The
# Spur Geared
# Factory Elevator.

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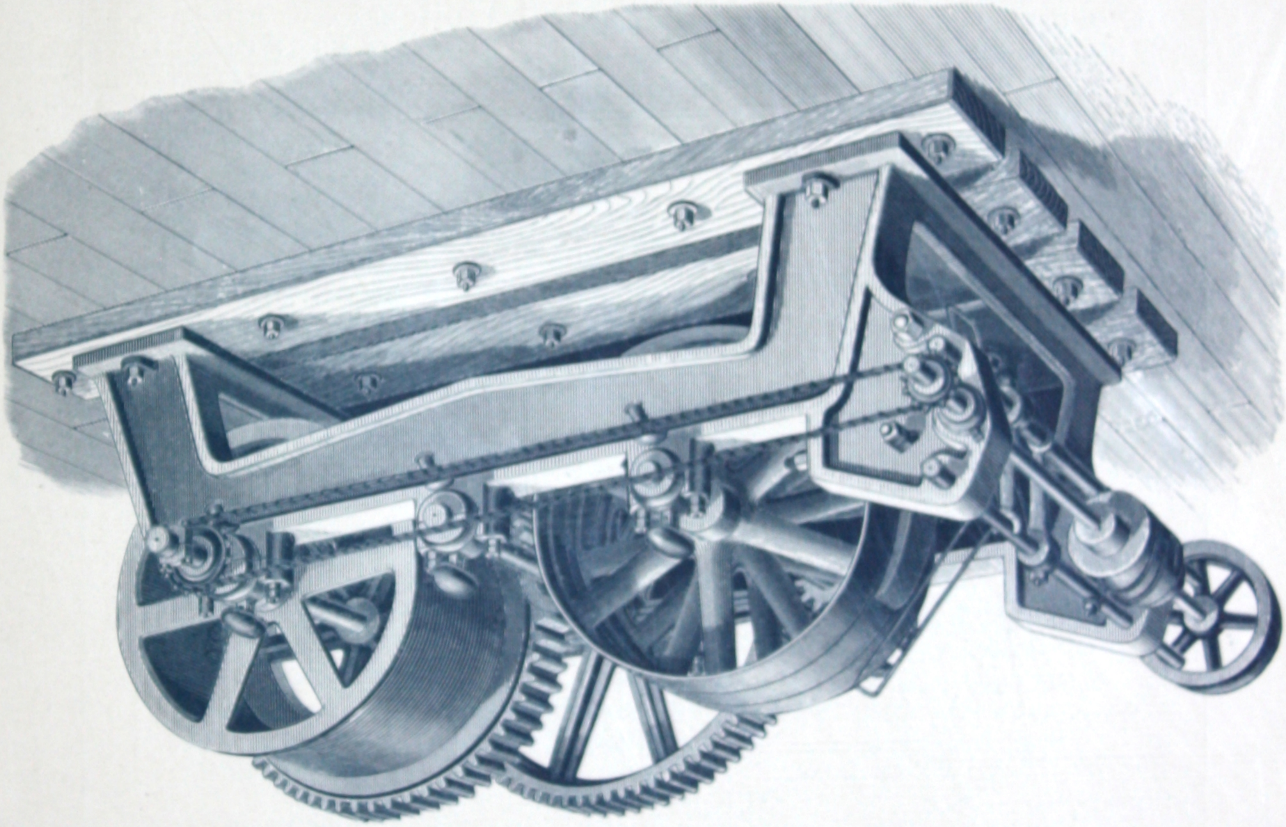
HAVING received many inquiries for a **Spur Geared Factory Elevator** for heavy duty, we have designed one which we think will meet all requirements.

Our illustration on the opposite page shows the machine only. It is connected to the freight cage in the same way as our Worm Geared machines, and combines all of its safety appliances.

No part of the machine has been slighted, either in the materials used or in the workmanship; and we guarantee each machine in all respects.

We are building this Elevator in several sizes, having a capacity of from two thousand to ten thousand pounds.



# Parties Using our Hydraulic Elevators.

## CHICAGO.

### PASSENGER ELEVATORS.

W. A. Giles,
Henry Potwin,
J. W. & J. B. Story,
Carver Building,
Hampshire Block,
Charles Busby,
C. J. Fry,
Haverly's Theatre,
St. Charles Hotel,
D. R. Dyche,
Sears' Building,
Hotel Albany,
Schloesser Block,
A. J. Averill,
Hotel Charlevoix,
Lyon & Healy,
Boulevard Flats
J. L. High,
Perry H. Smith,
L. Z. Leiter,
Central Music Hall (2)
W. B. Judson,
Henry B. Mason Bldg,
C. P. Libby,
Carson, Pirie & Co.
L. W. Yaggy,
Y. M. C. Ass'n,
E. Jennings & Co. (2)
Boone Block,
Oriental Building,
Michael Reese Hospital,
Hotel Marquette,
Lakeside Building,
Geo. H. Harding,
M. D. Wells.

### FREIGHT ELEVATORS.

Matthew Laflin.
Washburn & Moen Mfg. Co.,
Hussey, Howe & Co.,
P. J. Sexton,
C. E. Peacock,
D. H. McDanold & Co.,
Estate of S. N. Wilcox,
John DeKoven,
L. W. Yaggy,
J. A. Thomas,
H. M. Dupee & Co.,
Steele, Wedeles & Co.,
Henry Hemmelgarn,
Treat Campbell,
Fuller, Warren & Co.,
Tolman & King,
J. W. Doane & Co. (6),
Parkhurst & Wilkinson (2),
Chicago Ruffling Co.,
Wayne & Son,
Bannard, Lyman & Co.,
Carson, Pirie, Scott & Co.,
Chicago Carpet Co.,
Schillo, Crossman & Co.,
R. S. Reynolds,
Calvin DeWolf.
R. H. Baker,
Clement, Bane & Co. (2),
Lyon & Healy,
Stearns & Co.,
N. O. Williams & Co.,
Munson Belt Co.,
C. W. Marks,
Flemming & Merriam,
Mann, Barber & Co.,
Sea's,
C. P. Kimball & Co.,
Jonathan Clark,
Domestic S. M. Co.,
Marshall Field & Co.,
F. Sawyer (2),
Stein, Wright & Co.,
E. B Preston,
Robert Law,
Storm, Hill & Co.,
McLean & Retterer,
American Express Co
Jno. A. King & Co.,
Lapham & Waterbury,
J. B. Clow & Son,
O. H. Wullweber,
Cook & Seixas,
Singer Manfg. Co.,
E. Frankenthal,
Potwin & Corby,
Mullen, Bros. & Co.,
H. F. Vehmeyer,
Geo. Watson (2),
Gerstenberg & Co.,
H. C. Durand,
Charles Busby,
Chicago Storage Co.,
D. A. Hewes,
E. A. Saalfield,
A. C. Goodman (2),
P. Hayden & Co.,
Pennsylvania R. R. Co. (4),
Schott & Co.,
J. B. Inderiden & Co.,
F. Madlener,
Wilson Bros.,
M. Solomon.

# Parties Using our

# Hydraulic Elevators.

## OTHER CITIES.

### NEW YORK CITY.

*Francis Crawford, Apartment,
*Standard Oil Company (2),
*Wm. Belden,
*Heatherington, Apartment,
*C. E. Appleby, Apartment,
*Richfield, Apartment (2),
*J. J. Althouse, *J. B. Tallman,
*Home for Aged and Infirm Hebrews,
*J. A. Frame, Apartment (3),
*B. Spalding, Apartment,
*Wm. Van Antwerp, Apartment (2),
*G. W. Hamilton, Apartment,
J. J. Althouse, *E. C. Blaisdell, Apartment,
*J. Malloy, Apartment (4).

### PHILADELPHIA.

*E. P. Morris,
H. G. Morris,
E. P. Morris.

### DENVER, COLO.

*St. James Hotel,
I. S. Brown & Bro.,
*Industrial & Mining Exposit'n,
*Daniels & Fisher,
Meier & Fisher,
F. A. Keener,
*F. A. Keener,
Daniels & Fisher,
*Colorado Springs Hotel.

### MILWAUKEE.

*Chamber of Commerce,
Blair & Parsons,
Lusconet & Pierce,
A. D. Seamon,
Dr. Johnson,
John Pritzlaff,
*Alex. Mitchell,
A. J. W. Pierce,
Seamon & Co.,
Jewett, Sherman & Co.,
Goll & Frank (2),
S. Bryant,
R. Y. Owens,
I. Plankinton,
C. A. Kaeffler.

### ILLINOIS.

*Pullman P. C. Co., in tower, Pullman,
Pullman P. C. Co., Pullman (3),
Peoria Sugar Refinery, Peoria,
Moses Pettingill & Co., Peoria,
Kimber & Ragsdale, Springfield,
Frederick Hass, Rock Island,
C. Tegeler & Co., Rock Island,
R. A. Cutler & Co., Peoria,
*The Halliday (Hotel), Cairo,
*Jas. Haworth, Decatur.

### BURLINGTON, IOWA.

Pollock, Granger & Co.
Donohue & McCosh.

### DES MOINES, IOWA.

C. & L. Harbach,
C. C. Cole,
Sperry, Watt & Garver,
Keith, Thompson & Reese.

### MISCELLANEOUS POINTS.

*Hotel Lafayette, Lake Minnetonka, Minn.,
*Robert F. Hurlburt, Minneapolis, Minn.,
*H. D. Wood, Minneapolis, Minn.,
*W. F. Davidson, St. Paul, Minn.,
Insane Asylum, Ossawatamie, Kan. (2),
Atchison, Topeka & Santa Fe R. R., Topeka,
Leavenworth Sugar Refinery, Leavenw'th,
*Blake Opera House, Racine, Wis.,
Francis Palms, Detroit, Mich. (4),
*Stritmater Bros., New Castle, Penn.,
*Lahr House, Lafayette, Ind.,
E. D. Phelps, Brooklyn, N. Y.,
O. W. Pierce & Co., Lafayette, Ind.,
Studebaker Bros., South Bend, Ind.,
Geo. Wyman & Co., South Bend, Ind.,
*E. W. Cole, Nashville, Tenn.,
E. W. Cole, Nashville, Tenn.,
Nave & McCord Mercantile Co., St. Jos., Mo.
C. D. Smith & Co., St. Joseph, Mo.,
Brockett & Barnes, Kansas City, Mo.,
Smith Bros. & Co., New Orleans, La. (3),
*Vincent, Barstow & Co., Cleveland, Ohio,
Vincent, Barstow & Co., Cleveland, Ohio.
Geo. P. Whitelaw, St. Louis, Mo.,

**Passenger Elevators.*

## Parties ◇ Using ◇ our

# Steam Freight Elevators.

### CHICAGO.

W. M. Hoyt & Co. (2),
Dwight Bros. & Co.,
Jas. S. Kirk & Co. (3),
Marshall Field & Co. (9),
Heath & Milligan,
J. V. Farwell & Co. (5),
Seeberger & Breakey,
Geo. P. Gore & Co.,
Burley & Tyrrell (2),
Schweitzer & Beer,
E. Rothschild & Bro.,
Burke, Walker & Co. (2),
Thorn Wire Hedge Co.,
Chicago Stamping Co.,
Central Mfg. Co.,
McCormick Building,
C. T. Raynolds & Co.,
A. H. Andrews & Co.,

Schuttler & Hotz,
A. J. Averill,
S. B. Raymond,
W. T. Allen & Co.,
E. Schneider & Co.,
A. S. Gage & Co. (2),
Wm. Blair & Co.,
Edwin Hinchliffe,
S. D. Kimbark (2),
Van Schaack, Stevenson & Co.,
I. C. R. R. Office,
A. G. Leonard & Co.,
Geo. H. Taylor,
Studebaker Bros.,
Central Warehouse, A,
Alexander & Taussig,
Sweet & Dempster,

Central Warehouse, B,
Crerar, Adams & Co.,
Perry & Co.,
Mandel Bros.,
Sherman, Hall & Co,,
Gray, Burt & Kingman (3),
C. Jevne,
W. H. Railton,
Evening Journal,
Lakeside Building,
M. Greenebaum,
Tobey Furniture Co.,
S. A. Maxwell & Co.,
R. Deimel,
Kuh, Nathan & Fischer,
C. H. Fargo & Co.,
Jansen, McClurg & Co.,
Hamburger Bros.,

Keith, Benham & Dezendorf,
Robinson & Miner,
Armour Building (2),
Einstein, Longini & Co.,
A. B. Fiedler,
Chas. P. Kellogg (2),
Couch Estate Building,
Armstrong & Co.,
Williams Building (2),
Peck & Bauscher,
E. W. Blatchford,
Palmer House,
United States Storage Co.,
Fuller & Fuller (2),
Simon Strauss & Co.,
Buel & Wheeler,
J. V. Farwell,
Schnadig Bros.,

Eddy, Harvey & Co.,
French, Potter & Wilson,
Vergho, Ruhling & Co.,
Packer McDonald & Bliss,
Libby, McNeill & Libby,
S. D. Childs,
Hart Bros.,
Doggett, Bassett & Hills,
Selz, Schwab & Co.,
Meyer, Strauss & Co.,
C. M. Henderson & Co,
Wells & Nellegar Co.,
Wright & Lawther Oil and Lead Mfg. Co.

## Parties ◊ Using ◊ our

# Steam Freight Elevators.

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### OTHER CITIES.

J. Naylor & Co., New York,
Heiman Hamburger, New York (2),
Browning King & Co., New York,
Museum, Central Park, New York,
Henry Ames & Co., St. Louis,
Catlin Tobacco Co., St. Louis,
Noland, Jones & Co., St. Louis,
Francis Whitaker & Sons, St. Louis,
St. Louis Shot Tower Co., St. Louis,
Udell, Schmieding & Co., St. Louis,
Wm. N. Macqueen, St. Louis,
S. C. Davis & Co., St. Louis (2),
Crow, Hargadine & Co., St. Louis (2)
Meyer, Barnemann & Co., St. Louis,
Iowa City Sugar Refinery, Iowa City, Iowa,
Ely, Jones & Co., St. Louis,
Hamilton, Brown & Co., St. Louis,
Gauss, Hunicke & Co., St. Louis,
O. J. Lewis & Co., St. Louis,
J. H. Wear, Borgher & Co., St. Louis (3),
Excelsior Pickle Works, St. Louis,
Auerbach, Finch & Van Slyck, St. Paul, Minn.,
Clayton Bros., Denver, Colo.,
Nelson & Co., Burlington, Iowa,
William Ryan & Son, Dubuque, Iowa,
N. C. & St. L. R. R. Co., Johnsonville, Tex
Peters Manufacturing Co., Newark, N. J.,
Zion Co-operative Mercantile Institution, Salt Lake City, U. T.,
Vigo Iron Co., Terre Haute, Ind.,
R. S. Rhea & Son, Nashville, Tenn.,
McIntosh, Good & Huntington, Cleveland, Ohio.
Morgan Root & Co., Cleveland, Ohio (3),

## Parties ◇ Using ◇ our

# Worm Geared Factory Elevators.

### CHICAGO.

McCormick Harvesting Machine Co. (8),
Union Brass Manufacturing Co, (2
Woodruff Hotel,
J. J. Spalding & Co.,
Jno. B. Drake & Co.,
Cox Bros.,

Rand, McNally & Co. (3),
Sprague, Warner & Co.,
G. M. Munger & Co.,
Archer Refinery,
Norton Bros.,
Potter Palmer,

C. R. I. & P. R. R. Co. (2),
Cyrus Dupee & Co.,
Johnston Harvester Co.,
Chicago Screw Co.,
Vaughan & Bushnell,
Sharp, Clarke & Co.,
F. Mayer & Co.,

Chicago Anderson Pressed Brick Co. (3),
Thorn Wire Hedge Co.,
Wright & Lawther Oil Co.,
Western Electric Co. (2),
W. W. Kimball (2),
A. E. Bishop,
B. F. Adams.

Union Iron and Steel Co.,
Estate of Chas. M. Atkins,
Jas. M. Ryan's Building,
Schuttler & Hotz (2),
Woodman & Warner,
H. H. Shufeldt & Co.
Roth, McMahon & Co.,
John Anderson & Co.,

Warder, Bushnell & Glessner,
Niles Tool Works,
N. E. Platt & Co.,
Tremont House,
Wardell & Hinckley,
E. B. Preston,
Race Bros.

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## OTHER CITIES.

Sandwich Mfg. Co., Sandwich, Ill.,
J. T. Hohe & Co., Peoria, Ill.,
Rockford Tack Co., Rockford, Ill.,
Cutler & Proctor, Peoria, Ill.,
Barnard & Leas Mfg. Co., Moline, Ill.,
Frank Field & Co., Peoria, Ill.,
Gammon & Deering, Plano, Ill.,
Dimock, Gould & Co., Moline, Ill.,
J. F. Atkinson, Appleton, Wis.,
J. I. Case & Co., Racine, Wis.,
Racine Hardware Co., Racine, Wis.,
W. C. Conway, Milwaukee, Wis.,
Menasha Woodenware Co., Menasha, Wis.,
Wm. Becker, Milwaukee, Wis.,
J. B. A. Kern, Milwaukee, Wis.,
Evening Wisconsin Paper Co., Milwaukee, Wis. (2),
Sanger, Rockwell & Co., Milwaukee, Wis.,
Plankinton & Armour, Milwaukee, Wis.,
Rounadka Bros., Milwaukee, Wis. (2),
Ph. Best Brewing Co., Milwaukee, Wis. (2),
G. H. Brickner Sheboygan Falls, Wis.,
Anson Eldred & Son, Ft. Howard, Wis.,
G. J. Hanson & Co., Milwaukee, Wis.,
Foster & Jones, Oshkosh, Wis.,
Wm. Miller, Milwaukee, Wis.,
R. McMillen & Co., Oshkosh, Wis.,
Elk Rapids Iron Co., Elk Rapids, Wis.,
Michigan Insane Asylum, Kalamazoo, Mich.,
J. Weller, Detroit, Mich.,
C. H. Fargo & Co., State Prison, Ionia, Mich.,
Iowa City Packing Co., Iowa City, Iowa,
Curtis Bros. & Co., Clinton, Iowa,
Des Moines Soap Works, Des Moines, Iowa,
P. G. Stiles, Sabula, Iowa,
Breuer & Rhodes, St. Paul, Minn.,
Sommer Huggins & Co., St. Joseph, Mo.,
E. V. White & Co., Minneapolis, Minn.,
Lindell House, St. Louis, Mo.,
Noyes Bros. & Cutler, St. Paul, Minn.,
Beaupre, Allen & Keogh, St. Paul, Minn., (2),
John Wann, St. Paul, Minn.,
Archibald, Schurmeir & Smith, St. Paul, Minn.,
John A. Berkey & Co., St. Paul, Minn.,
Strong, Hackett & Co., St. Paul Minn.,
P., Ft. W. & C. R. R. Co., Ft. Wayne, Ind.,
George L. Farwell, St. Paul, Minn.,
Coombs & Co., Ft. Wayne, Ind.,
Duluth Blast Furnace Co., Duluth, Minn.,
Erwinn, Upp & Co., Elkhart, Ind.,
Culver & Geiger, Lafayette, Ind. (2),
Paulding Iron Co., Cecil, Ohio,
Dannemiller & Son, Canton, Ohio,
Northern Pacific R'y, Brainard, Minn.,
Pettingill Boot and Shoe Co., Chester, Ill.,
Niagara Falls Flour Mills Co., New York.,
C. H. Lawrence & Co., New Orleans, La.,
Baldwin & Graham, New Castle, Penn.
Healy, Williams & Co., New York City,
F. N. DuBois, New York City.

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cart +

## Parties ◇ Using ◇ our

# Steam ✱ Passenger ✱ Elevators.

### CHICAGO.

Blakely, Marsh & Co.,
C. H. Fargo & Co.,
Kuh, Nathan & Fischer,
J. V. Farwell & Co.,
Einstein, Longini & Co.,
Morrison Block,
Union Building,
Marshall Field & Co.,
Dore Block,
American Express Co.,
W. F. Story,
Chamber of Commerce,
Henry Field,
Matteson House,
Pike Building,
C. W. & E. Partridge,
Vergho, Ruhling & Co.,
Kendall Building,
J. V. Farwell & Co. (2),
C. B. Blair,
C. A. Coutant & Co.,
Exposition Building,
Geo. H. Taylor,
S. A. Maxwell & Co.,
A. S. Gage & Bro. (2),
Merchants Building,
Mercantile Building.
Open Board of Trade (2),
Carson, Pirie, Scott & Co.,

### OTHER ✦ CITIES.

Scruggs, Vandervoort & Barry, St. Louis, Mo.,
Masonic Hall, St. Louis, Mo.,
Crow, Hargadine & Co., St. Louis, Mo.,
D. J. Crawford, St. Louis, Mo. (2),
Vandalia Railroad Office, St. Louis, Mo.,
Pueblo Building and Investment Co., Pueblo, Colo.,
G. N. & W. M. Clayton, Denver, Colo.,
Morgan Root & Co., Cleveland Ohio (2),
Vance Block, Indianapolis, Ind.,
Cleveland Jail, Cleveland, Ohio,
Windsor Hotel, Montreal, P. Q.,
Metropolitan Hotel, St. Paul, Minn.,
Sweet's Hotel, Grand Rapids, Mich.,
Cutler House, Grand Haven, Mich.
Jno. H. Cheever, New York City.

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CRANE BROS. MANFG. COMPANY
ESTABLISHED 1855.
INCORPORATED 1865.
CHICAGO.

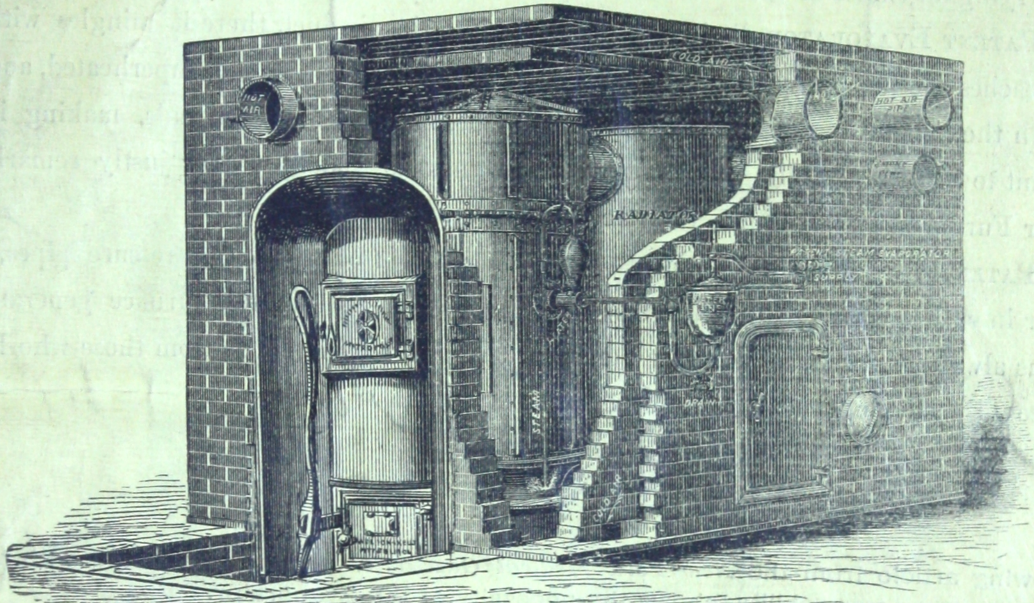
# THE METROPOLIS WARM AIR FURNACE,

## WITH RADIATOR. SET IN BRICK.

MANUFACTURED BY

## *WELDON & KELLY,*

147 WOOD STREET, - PITTSBURGH, PA.



THE LEADING FURNACE BEFORE THE PUBLIC.

This Furnace is made of Wrought Iron, Homogeneous Steel or Cast Iron, lined with fire-tile, and is built in brick walls that prevent the heat from radiating through them, thus securing a perfect distribution of heat through the warm air pipes. An examination of the above cut will show that this Furnace has all the desirable features to secure economy, power and cleanliness. The Grate can be shaken and dumped without opening the doors; and with the Patent Evaporator attached, gives out a moist, healthy air. This is the very best Furnace in the market; we except none, and are ready with reference to establish the claim.

Soft or hard coal or coke burn equally well in them. We make

### THREE SIZES,

Diameter of Body: No. 1½, 21 inches; No. 2½, 27 inches; No. 3½, 34 inches.

# WELDON'S PATENT EVAPORATOR.

The capacity of air to absorb moisture is increased by heat, and if not supplied in a proper manner, it not only shrivels and shrinks up the wood-work of the house to obtain it, but also extracts it from the nose, throat and lungs of the inmates.

Since the year 1871 we have applied this valuable scientific invention to a large proportion of the METROPOLIS FURNACES sold, and have the most convincing proofs of its merits, both in creating a pleasant, healthy atmosphere, and adding to the heating power of the furnace; unlike vapor pans, which are set on the top or side of the furnace, and throw off an irregular quantity of steam, generated from a varying quantity of water, which steam is drawn only through the warm air pipe directly over it, carrying an excess of moisture to one apartment, while the other receives none.

The PATENT EVAPORATOR discharges the steam into the air duct, there it mingles with the air before it reaches the furnace, passes around all parts of the fire pot, becomes superheated, and supplies the air with the amount of moisture its expansion by becoming heated demands, making it healthy and pleasant to breathe, expelling that sensation of dryness so generally and justly remarked about Warm Air Furnaces, and adding to their heating power.

The PATENT EVAPORATOR is automatic, supplying itself from the city pressure pipes, or tank, with water in such quantity, as the increased or diminished heat of the furnace generates it into steam, thus always supplying the proper quantity. We have testimonials from those who have it in use, and could not be induced to use a Furnace without an Evaporator.

* * *

**The following article from the *New York Medical Gazette*, a Journal Conducted with undoubted ability, shows the necessity of the Evaporator.**

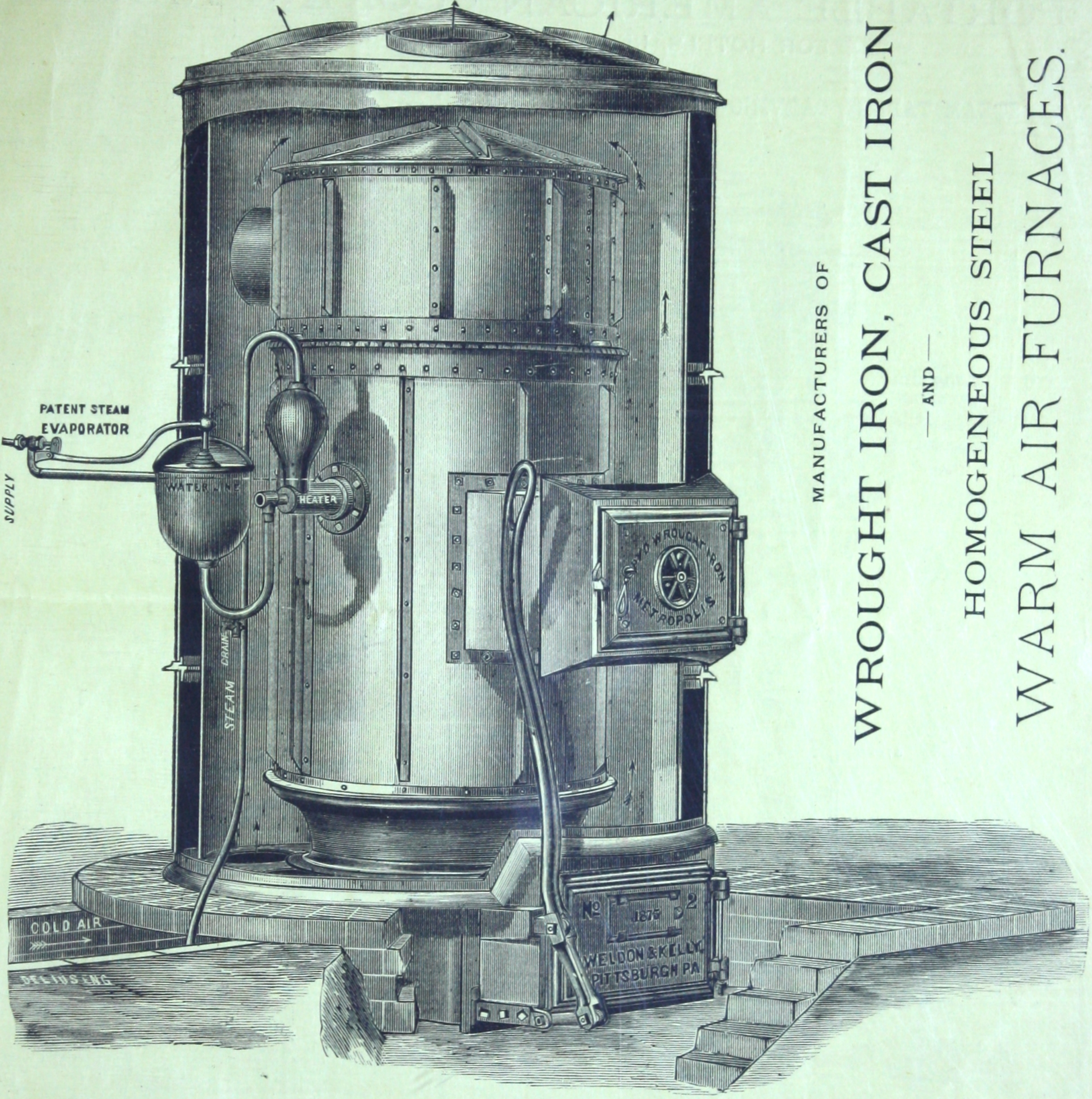
"It may be news to learn that there are certain physiological phenomena connected with excessive or defective humidity of the atmosphere, that under the latter condition, owing to the affinity of air for moisture, the respiratory surfaces will be refrigerated and dried by unusual evaporation from them; and that the same process, to a less degree affects the whole surface of the body. Now, granting that in a literal sense, none of the existing moisture is expelled from the air by raising the temperature, an immense relative reduction of its humidity is thereby affected. Suppose, for instance, that the atmosphere of a room of two thousand cubic feet contents have its hygrometric capacity for moisture satisfied on a freezing morning. We build a good fire in a stove and warm this room to, say 75° Fahrenheit, and in doing this we so reduce the *relative* amount of moisture, that at least a pound of water is required to bring the air to the same condition in which we found it. And what is more, the thirsty air will have this water in some way, and, if we do not supply it by evaporation from external sources, will, to use a vulgar but appropriate slang phrase, 'take it out of our hides.' For our own part, we prefer the former alternative."

# THE METROPOLIS WARM AIR FURNACE,

MANUFACTURED BY

## WELDON & KELLY,

147 Wood Street, Pittsburgh, Pa.



MANUFACTURERS OF
WROUGHT IRON, CAST IRON
—AND—
HOMOGENEOUS STEEL
WARM AIR FURNACES.

This furnace has been manufactured by us for the past ten years, and we can say that with our improvements, it is equal, if not superior, to any manufactured. An examination of the above cut will convince you that we have all the essentials that are needed to make a powerful, durable, economical and easy-managing Furnace. The body is made of wrought iron or homogeneous steel, lined with fire-tile, the feed door is large, the Grate can be shaken and dumped without opening the door. It is suitable for heating all kinds of private and public buildings. Soft or hard coal or coke can be used in it with entire satisfaction.

The cut shows Weldon's Patent Evaporator, attached for the purpose of making the air moist and healthy. References and prices furnished on application.

**FOUR SIZES FOR CASING. Diameter of Body—No. 0, 21 inch; No. 1, 21 inch; No. 2, 27 inch; No. 3, 34 inch.**

# WELDON & KELLY,

147 Wood Street, Pittsburgh,

MANUFACTURERS OF THE CELEBRATED

## ENTERPRISE FAMILY COOKING RANGE,

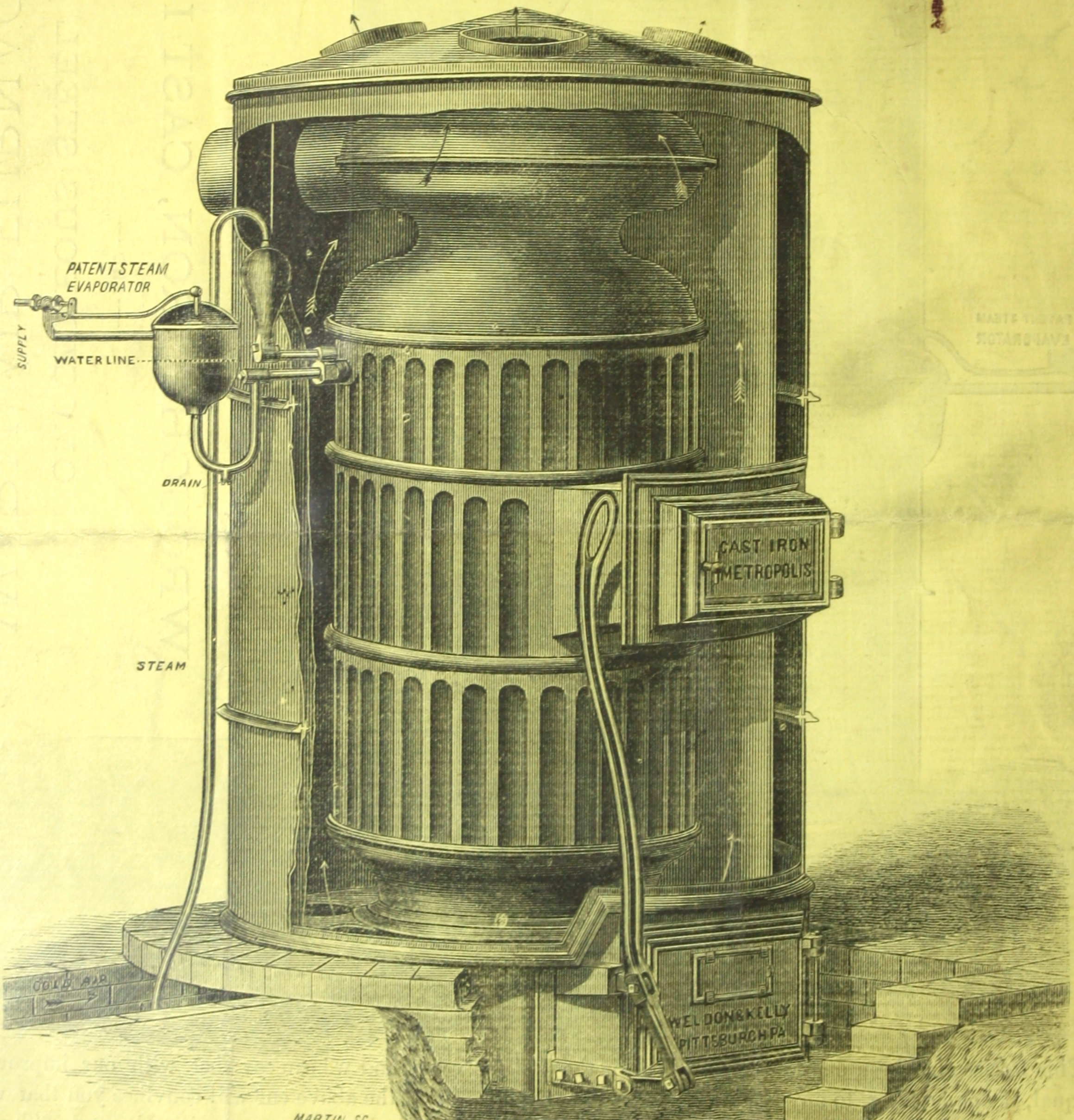
AND

## PORTABLE AMERICAN COOKING RANGE,

FOR HOTELS, RESTAURANTS AND FAMILIES.

ALSO

**STEAM TABLES, CARVING TABLES, BROILERS, LAUNDRY STOVES, COFFEE URNS, &c.**



# METROPOLIS CAST IRON WARM AIR FURNACE.

This Furnace is made of heavy cast iron cylinders, with cup tops that form a perfect gas tight joint. The fire pot is lined with fire-tile. The grate is shaken by the upright lever. Both shaking and dumping being performed without opening the ash-pit door, no dust can escape to the cellar. After experimenting with various so-called radiator tubed furnaces, we have invariably found the METROPOLIS their equal in power, and superior in respect to the perfection of joints and ease of repairing, etc.,—Important and desirable features.

☞ For Dwellings, School Houses, &c., the Patent Evaporator should be used.

**FOUR SIZES FOR CASING. Diameter of Body—No. 0, 21 inch; No. 1, 21 inch; No. 2, 27 inch; No. 3, 34 inch.**